

3.0 INTRODUCTION TO THE WCS - GUATEMALA SCARLET MACAW CONSERVATION PROGRAM AND WORKSHOP OBJECTIVES

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3.1 Introduction and Background

Since 2002, the Wildlife Conservation Society has been working to conserve the last remaining population of scarlet macaws (*Ara macao cyanoptera*) in the country of Guatemala. After six years of engagement, WCS is now working to build a broad alliance with local, national, and international institutions to increase the number of wild flying macaws in Guatemala's last safe haven for the species, the Maya Biosphere Reserve (MBR). As part of this ambitious goal, with the help of national and international partners we have convened this workshop to evaluate the viability of a pilot program to reinforce¹ scarlet macaw populations in the Maya Biosphere Reserve. We also hope to compare this intervention with other interventions that may contribute to the recovery of the species, and build alliances that permit greater collaborations on all aspects of scarlet macaw conservation in Guatemala.

During the last six years, WCS and our national partners have engaged in habitat protection, monitoring of nesting success, studies of habitat use and distribution of nesting sites, construction of artificial nests, environmental education in local communities, and involvement of local community members in conservation efforts. As of 2007, we expanded interventions and research to include pilot initiatives including testing permethrin treatments of nests to ward off Africanized bee infestation, and satellite PTT collar telemetry. During 2008 we tested the utility of remote camera technology to monitor chick predation and macaw activity within nesting cavities.

3.2 Rationale

The underlying rationale for evaluating macaw reinforcement and other interventions designed to increase the population size in the Maya Biosphere Reserve is based on the following factors:

- 1) The current population estimate for the entire country is ~150-250 individuals, although this is an imprecise estimate since a census of macaws remaining *in situ* has not been possible.
- 2) Significant headway has been made in retarding the spread of habitat colonization and fire into the last remaining nesting strongholds of the species, within the eastern Laguna del Tigre ecosystem. Poaching of chicks was also one of the greatest threats to the species; but this

¹ According to the "Guidelines for Re-introductions" of the IUCN/Species Survival Commission's Re-introduction Specialist Group (1998), four strategies for *in-situ* population augmentation exist: "**1) Re-introduction:** an attempt to establish a species in an area that was once part of its historical range, but from which it has been extirpated or become extinct (Re-establishment is a synonym, but implies that the re-introduction has been successful); **2) Translocation:** deliberate and mediated movement of wild individuals or populations from one part of their range to another; **3) Reinforcement/Supplementation:** addition of individuals to an existing populations of conspecifics; and **4) Conservation/Benign Introductions:** an attempt to establish a species, for the purpose of conservation, outside its recorded distribution but within an appropriate habitat and eco-geographical area. This is a feasible conservation tool only when there is no remaining area left within a species' historical range".

threat has been greatly reduced by protection campaigns at 4 of the 5 major nesting sites remaining. *Note: however, threats to the habitat continue, and sustaining and improving habitat protection efforts with national partners will be an essential part of any effective scarlet macaw conservation plan for the foreseeable future.*

- 3) Macaws are a very social, long-lived avian species that benefit greatly from social transmission of knowledge about their habitat. The behavior and vocalizations (and presumably the communications) of wild birds vary from those of individuals bred and raised in captive settings. For these reasons, a reinforcement program would be best undertaken when (and where) wild macaws might be able to mix with juveniles released using soft releases from *in situ* flight cages.
- 4) Preliminary Population Viability Analysis modeling of the species suggested that the additional recruitment of 5 fledges per year would reduce the probability of extinction, assuming the persistence of adequate habitat. (*Note: an expert-led Population Viability Analysis was developed as a result of the workshop, and is included as a chapter in the Compendium from this workshop*).
- 5) Developing a high profile project designed to increase macaw populations in conjunction with a broad alliance of actors, will focus a strong national (and possibly international) spotlight on the plight of the macaw in Guatemala, and the urgent need for continuing to improve habitat protection and management.

Secondary factors include:

- 1) The existence of an excellent candidate site (El Perú) for the development of a reinforcement program based on the establishment of an *in situ* flight cage where juvenile macaws could be exposed to wild populations (auditory stimuli, and eventual contact). El Perú is located 3 hours from Flores, and contains a permanent presence of army and guards that protect a camp facility located at the site. El Perú may also be a good candidate for a supplemental feeding intervention due to the low fledging rate of chicks at this site.
- 2) Two significant captive populations exist in the country (ARCAS, Aviarios Mariana or AM), and both have had success breeding scarlet macaws. Both of these institutions have expressed interest in participating in the program.
- 3) WCS Field Veterinary Program personnel led a comparative evaluation of the health of wild chicks and adults at the ARCAS rescue center (with no conclusive determination reached as to the viability and/or lack of viability of using those macaws as breeding stock). Serology tests of some ARCAS macaws yielded some positives for polyoma, WNV, Psittacine Herpes Virus (Pacheco's), and paramyxovirus 1, and several also tested low positive for *Aspergillus* and *Salmonella pullorum*. Wild chicks were comparatively clean, with only a few with mites. Ten additional macaw serum samples from Aviarios Mariana (8) and from ARCAS (2) were recently tested (February 2008) at the Texas Veterinary Medical Diagnostics Lab. Samples were reported negative for *S. pullorum*, avian paramyxovirus 1,2, and 3, Pacheco's, polyoma, avian influenza, and West Nile virus except for one positive from Aviario Mariana for WNV. In 2004, PCR tests of ARCAS macaws yielded negatives for avian chlamydia, Pacheco's, polyoma, and *Salmonella* (sp. not specified). While this testing is not conclusive, serious disease issues are not indicated at either aviary (as of early 2008).
- 4) A genetics study underway by Dr. George Amato of the American Museum of Natural History, and Columbia University Ph.D. student Kari Schmidt, will provide the ability to screen possible breeding pairs prior to engaging them in the production of chicks for wild

release. Kari Schmidt has already visited MBR field sites to obtain genetic samples of wild macaws, as well as conducted initial limited sampling at Aviarios Mariana, ARCAS, and obtained samples from Belize.

- 5) Technical guidance in macaw husbandry, and partial financial support for jump starting the project is forthcoming from Dr. Janice Boyd, Director of Amigos de los Aves, USA. Dr. Boyd has also enlisted the support of Dr. Darryl Styles of the US Department of Agriculture who has extensive experience in the field of psittacine health, and Dr. Donald Brightsmith of Texas A&M University – a field researcher focused on Peruvian psittacines. WCS Veterinarian Dr. Bonnie Raphael, and Avian Curator Dr. Nancy Clum have also been enlisted to advise our efforts.
- 6) WCS Guatemala has also joined forces with SalvaNATURA, the largest conservation NGO in El Salvador. Psittacine expert and former WCS Research Fellow Dr. Robin Bjork has been hired by SalvaNatura to lead their campaign to reintroduce scarlet macaws to the country of El Salvador.
- 7) Due to their important role as flagship species for the conservation of the Maya Biosphere Reserve, WCS Guatemala enjoys the full support of the Guatemalan National Park Service (CONAP) to develop projects that improve the outlook for scarlet macaws.

3.3 Specific Workshop Objectives

- 1) Gather experts to evaluate and develop a protocol for reinforcing scarlet macaws in the Maya Biosphere Reserve, including each of the possible interventions that may help increase the number of wild flying macaws (i.e. supplemental feeding, natural competitor & predator control, increase nesting cavity availability, captive bred releases, etc.)
- 2) Search for consensus on minimal health criteria for captive-bred wild releases of juvenile macaws
- 3) Visit Aviarios Mariana – conduct a quick evaluation of birds in captivity – and develop a plan for formal health testing of aviary birds
- 4) Visit ARCAS – conduct a quick evaluation of birds in captivity – and develop a plan for formal health testing of aviary birds
- 5) Visit field site proposed for introductions and in situ management
- 6) Engage researchers and collaborators to help institutions working in Guatemala and El Salvador develop pilot projects that evaluate the efficacy of proposed interventions, and strengthen macaw (and psittacine) populations

3.4 Desired Workshop Outcomes

- 1) Initial assessment of the viability of reinforcing scarlet macaws via captive-bred releases, and the viability of other interventions designed to increase wild populations
- 2) Development of a psittacine reinforcement/reintroduction working group
- 3) Identification of priority interventions for the next breeding season, taking into account existing resources available
- 4) Development of ideas for joint fundraising efforts
- 5) Documentation of the information produced and lessons learned, and dissemination of such to participants, partners, governmental agencies, and interested individuals and institutions.

